

What is claimed is:

1. A structure for a semiconductor device, provided with a contact plug, which is formed by forming a contact hole through a first interlayer insulating film on a silicon substrate and by filling the contact hole with silicon, comprising:

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- 5 a silicide pad formed on the top surface of the silicon plug in a self-aligning manner and having a diameter which is larger than that of the silicon plug;
- wherein, the top surface of said silicide pad is formed above the top surface of said first interlayer insulating film.

2. A structure of a semiconductor device according to claim 1, wherein said silicide pad is formed by a refractory metal silicide.

3. A structure of a semiconductor device according to claim 1, wherein said refractory metal silicide is any one of titanium silicide and cobalt silicide.

4. A method for manufacturing a semiconductor device, provided with a contact plug, which is formed by opening a contact hole through a first interlayer insulating film formed on a silicon substrate and filling the contact hole with silicon, comprising the steps of:

- Sub B2
- 5 forming a first insulating film on said silicon substrate;
- forming said contact hole through said first interlayer insulating film;
- filling said contact hole with a silicon plug; and
- forming a silicide pad having a larger diameter than that of said silicon plug in a self-aligning manner;

10 wherein, the top surface of said silicide pad is disposed above the top surface of said first interlayer insulating surface.

5. A method for manufacturing a semiconductor device according to claim 4, wherein the step of forming said silicide pad includes the steps of:

selectively and partially removing the insulating film and silicon at least in the vicinity of said contact plug such that the plug protrudes;

5 depositing a refractory metal film;

converting the refractory metal film into the refractory metal silicide by a heat treatment; and

removing said refractory metal film remaining without being converted into silicide and reaction products between said refractory metal and an atmospheric gas during the
10 heat treatment.

6. A method for manufacturing a semiconductor device according to claim 5, wherein said refractory metal is at least any one of titanium and cobalt.

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